Claims



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An agrochemical composition comprising an agrochemical active ingredient and an adjuvant of formula (I) and salts thereof

$$X - (R^3O)_a - R^4 - N R^2 R^1$$
 (I)

wherein R¹ and R² are independently hydrogen or a lower alkyl group containing from 1 to 4 carbon atoms,

R³O is an ethoxy, propoxy or butoxy group or a random or block mixture thereof, R⁴ is a linear or branched chain alkylene bridging group containing from 1 to 4 carbon atoms, X is

(IA) -OH or a lower alkoxy group containing from 1 to 4 carbon atoms or X is

(IB) a group R⁵R⁶Nwherein R⁵ and R⁶ are independently hydrogen or a lower alkyl group containing
from 1 to 4 carbon atoms
or X is

(IC) a group

 $CH_2 - O-$ | $CR^{18} - (R^{21})_d - O-(R^8O)_b - R^9 - NH_2$

CH2-O-(R12O)c-R13-NH2

wherein R⁸O and R¹²O are independently ethoxy, or propoxy or a random or block mixture thereof, R⁹ and R¹³ are independently a linear or branched chain alkylene bridging group containing 2 or 3 carbon atoms, R²¹ is a linear or branched chain alkylene bridging group containing from 1 to 3 carbon atoms, R¹⁸ is hydrogen or lower alkyl containing from 1 to 4 carbon atoms. It is 0 or 1,

and wherein a, is from 1 to 400 or if X is of formula IC, the sum of a, b and c is from 3 to 400,

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provided that when X is of formula (1B), the adjuvant of formula (1) does not have the structure

 CH_{3}

CH₃

wherein n is 2 or 3.

- 2. A composition according to claim 1 wherein a is from 1 to 50 or if X is of formula IC, the sum of a, b and c is from 3 to 90.
- 3. Accomposition according to claim 1 wherein the adjuvant of formula (I) is an alkoxylated monoamine, having the formula II

$$C_{H_3} - O - (-CH_2CH_2O -)_x - (-CH_2 - CH(CH_3) - O -)_y - CH_2 - CH(CH_3) - NH_2(II)$$

wherein the average degree of ethoxylation (x) is from 0 to about 45 and the average degree of propoxylation (y) is from 0 to about 90 provided that x and y are not both 0 at the same time.

A composition according to claim 3 wherein the value of x is from 0 to about 20 and of y is from about 2 to about 30.

A composition according to claim 1 wherein the compound of formula (I) is a diamine having a formula (II)

$$H_2^2N-(CH(CH_3)-CH_2-O)_w$$
 - CH_2 - $CH(CH_3)-NH_2$ (III)

wherein w is an average of from about 1 to about 80.

A composition according to claim 5 wherein w is an average of from about 2 to about 35

A composition according to claim 1 wherein the compound of formula (I) is a diamine having a formula (IV)

H₂N-(CH(CH₃)-CH₂-O)_r-(CH₂CH₂-O)_s-(CH₂-CH(CH₃)-O-)_t-CH₂-CH(CH₃)NH₂ (IV) wherein the sum of r + t is an average of from 1 to 20 propoxy groups and s is an average of from 2 to 50 ethoxy units.

- 30 8. A composition according to claim 7 wherein the sum of r + t is from about 2 to about 15 and s is from about 3 to about 20.
 - 9. A composition according to claim 1 wherein the compound of formula (I) is a propoxylated triamine having the formula (V)

CH₂ - O-(CH₂-CH(CH₃)-O)_d-CH₂CH(CH₃)-NH₂

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$$CR^{22} - (R^{21})_d - O - (CH_2 - CH(CH_3) - O)_e - CH_2 CH(CH_3) - NH_2$$
 (V)
 $CH_2 - O - (CH_2 - CH(CH_3) - O)_e - CH_2 CH(CH_3) - NH_2$

wherein the sum of d + e + f is an average of from about 5 to 90, R^{22} is hydrogen or lower alkyl containing 1 to 4 carbon atoms, R^{21} is a linear or branched chain alkylene bridging group containing 1 to 3 carbon atoms and d is 0 or 1.

10. A composition according to any of the preceding claims wherein the proportion of adjuvant of formula (I) to the agrochemical is from 1:20 to 3:1 by weight.

A composition according to any of the preceding claims wherein the adjuvant of formula (I) in claim 1 is used in combination with an alkylpolyglycoside surfactant.

A composition according to claim 11 wherein the ratio of the adjuvant of formula (I) to the alkylpolyglycoside surfactant is from 1:40 to 4:1.

A composition according to any of the preceding claims wherein the agrochemical active ingredient is a salt of glyphosate, a salt of fomesafen or a paraquat salt.

A composition according to any of claims 1 to 12 wherein the adjuvant of formula (I) in claim 1 is used in the form of a salt with glyphosate or a salt with an acidic surfactant.

15. A process of severely damaging or killing unwanted plants which process comprises applying to the plants or to the growth medium of the plants, a herbicidally effective amount of a composition as claimed in any of claims 1 to 14.

16. A composition according to any of claims 1 to 14 which is an aqueous composition containing from 0.01% to 90% by weight of the active ingredient.

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